MOC Safety and Environmental Management

Marine Operations Center Safety and Environmental Newsletter

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In this newsletter:

Operational Risk Management - explained

By James Schell, MOC Safety and Environmental Compliance

The buzz word around NOAA and NMAO for the last year or so has been Operational Risk Management (ORM). Operational Risk Management is a continuous, systematic process of identifying and controlling risks in all activities. This process includes detecting (predicting) hazards, assessing risks, and implementing and monitoring controls to reduce risk As Low As Reasonably Practicable (ALARP).

ORM can be broken down into a six step process:

- Identify the hazards
- Assess the Risks
- Analyze Risk Control Measures
- Make Control Decisions
- Implement Risk Controls
- Supervise and Review

The maritime community is beginning to realize the benefits of ORM approach to make decisions. The Coast Guard and Navy have been using ORM for a number of years. FAIRWEATHER completed a course earlier this year that was presented by Loyds of London on ORM.

In addition to informal ORM, the MOC is in the process of reviewing the safety accident reports of the FY05 and years past. MOC will identify areas of operations, or activities, as candidates for a formal ORM evaluation. A team consisting of MOC personnel, ship personnel, and Management, will share its analysis such that all vessels or personnel can use in their operations.

More on ORM will be coming the coming months. Stay tuned.

Accident Reports and Reporting

By James Schell, MOC Safety and Environmental Compliance

Accident reports are a requirement by the NAO 209-1 NOAA Safety Policy. The policy requires all employees to report:

- unsafe working conditions using CD-351
- Accidents, or near miss, using CD 137 and a CA 1/CA 2, if applicable.

MOC developed the MOC 137 which combines the CD 137 with a MOC specific form to aid tracking all accidents and near misses. These reports aid in assessing trends, identifying high risk operations, and enhance our safety culture. Each employee must make safety part of the daily routine. If you see an unsafe or unhealthful condition report it to your supervisor or fill out form CD 351.

Most accidents can be preventive, but if reports are not filled out MOC cannot track or develop trends in safety related issues. Do your part by continuing to stay safe, and report all accidents, near misses, and all safety concerns.

If you have not read the NAO 209-1, go to MOCDOCs collection 3. Administrative Orders and review the policy.

NOTE: We are not looking to put blame on individuals, but we need to know what happened and how can we prevent it from happening again. Risk Management requires Data Management!

If you feel that you need assistance with a safety related matter you can always contact me.

The Danger of Ladder Wells

from Ltjg. David Millner and CTT1(AW) David Butkus, VAQ-139

On-loads are stressful times, in that we often feel rushed. We've had at least three occasions when someone was in danger of being injured while carrying knuckle boxes. The problem each time was that no one had considered how to properly move the heavy boxes up the steep, narrow, ladder wells.

Having been responsible for the classified-material on-load for the past 23 trips made by our squadron, we have learned several lessons about the safest and most efficient way to get those more than 150-pound boxes from the hangar bay to their assigned locations. This article shares a few tips on how to make your next on-load a little easier and a lot safer.

Lesson one:

Take breaks. Working partners often aren't matched equally with regard to strength, which can lead to unhealthy competition and a feeling that one must prove he or she can handle the load without stopping. Learn from the mistakes of others. It's better to take breaks between decks than it is to lose your grip halfway up a ladder and have a load fall on the partner below. Don't feel

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pressured by people waiting behind you to use the ladder well. Their foolish sense of urgency is not worth your safety. Let them go around you when an opportunity presents itself.

Lesson two:

Always let the shorter of the two partners go up the ladder first and come down last. The easiest way to take a rectangular box up a ladder is to keep it as level as possible. If the taller partner has to bend down to try and keep a box level, he may lose his balance and control. This position also puts considerable pressure on the lower back and exposes workers to serious injuries.

Lesson three:

The lower partner on a ladder should hold the bottom of the box, not the handle. This position increases control and leverage.

Finally, ensure a safe transit by wearing gloves. Without a firm grip on the box, even the strongest partner may let go and crush the other person.

Take care of yourself and your shipmates by applying the principles of risk management to every event.

Chemical Handling and Storage

from MM1 (SW) Karlus Smith
Naval Safety Center

During some recent afloat surveys, our Surveyors observed ship's force personnel using calcium hypochlorite ($CaCl2O_2$) to clean shower stalls, urinals, and other areas. The use was not supervised adequately and as a result, the solution was not mixed to the safe and proper ratio. Personnel were not wearing correct PPE. Adherence to specific safety precautions for use and storage is mandatory.

- Do not stow in machinery spaces, storerooms, flammable liquid stowage areas, berthing spaces, or oil and water test laboratory areas. Stowage shall not be in areas used for stowage of greases, oils, paints, or other combustible materials. Stowage shall be away from oil lines and other potential sources of combustible material, and at least 5 feet from any source or surface, which may exceed 60°C (140°F). Stowage areas shall not be subject to condensation or water accumulation.

- Ready-use stock of mixed chemicals that has been issued to medical and engineering departments shall be stowed in a locked box mounted on a steel bulkhead, preferably in the associated department's office space. A gray metal box labeled (with red letters on a white background: **HAZARDOUS MATERIAL**), such as a first-aid locker, is recommended. Three 1/4-inch holes shall be drilled in the bottom of the box to release any chlorine products.
- Not more than a reasonable supply shall be stowed in any individual locker or bin.
- Issue of chemicals/Hazardous Materials, shall be made only to personnel designated.
- Store oxidizers in their original containers. Make sure containers are tightly sealed and properly labeled.

Ballast Operations, Did You Know?

From CDR Walter L Banks
Naval Safety Center

Did you know that the U.S. Navy has adopted U.S. Coast Guard's guidelines for preventing unwanted introduction of aquatic organisms and pathogens into coastal waters? The new standards decrease the possibility of introduction of cholera and other pathogens into U.S. waters. Pollution of this type is of particular concern in harbors, rivers, inlets, bays, and the open sea within 12 nm of the entrance to waterways. Many of these organisms can be taken up with ballast water and transferred to different locations causing damage to the ecosystem. These species are more prevalent within 3 nm from the shore and within the polluted areas.

If it is necessary for a ship to load ballast water in an area that is either potentially polluted (as defined in paragraph 19-10.2 of OPNAVINST 5090.1B, *Navy Environmental and Natural Resources Program Manual*) or within 3 nm from the shore, then the ship shall pump the ballast water out when outside 12 nm from shore. They also must fill the tank(s) with clean seawater and pump twice before the next entry within 12 nm from shore. This is because residual water remains in a tank after emptying which could contain unwanted organisms that could multiply and transfer during the next ballasting evolution. All evolutions discussed in this article shall be documented in the ship's Engineering Log.

See ENV 09, *BALLAST WATER* for MOC guidelines for Ballast Operations aboard NOAA Ships.

Slippery When Wet!

From DCC(SW) Jake Speed Naval Safety Center

Why do so many mishaps result from something as routine as climbing or descending ladders?
That's just it: They are ladders, not stairs, yet Sailors use them as stairs. Sailors in a hurry jump half way down the ladder, or carry boxes on the ladder where they

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can't see in front of them. The next thing you know, they are at the bottom of the ladder with a sprained leg, back injury, or broken bone.

Shipboard ladders have a 50- to 60-degree incline (an angle much steeper than your "normal" home staircase). These ladders are transited more frequently; as such; they accumulate more wear and tear on treads and rungs than do the steps on normal household stairs.

Transiting shipboard ladders is a part of a Sailor's daily routine. There's no getting around using ladders; but, the following hints will help you avoid becoming another ladder-mishap victim.

- Use common sense! Don't carry stores, supplies, or anything else that obstructs your field of vision while transiting ladders. Set down those two five-gallon cans of paint when using a ladder. So what does a Sailor do? Carry up one five-gallon can at a time? Get a couple of shipmates to stand at different points and hand the cans up or down like in a bucket brigade? We need to be specific here! Traveling up or down a ladder while not watching (or being able to see) your step is asking for trouble.
- Regularly inspect ladder rungs and treads, and the condition of the non-skid. If they are worn or are in poor condition or wet, you have a recipe for disaster and injury.
- Make sure Preventive Maintenance is being performed.
- Address ladder safety--how to ascend and descend-- during all new arrival indoctrinations, during visitor welcome-aboard presentations, and during safety stand-downs. Regularly address ladder safety in safety meeting notes.
- Have proper stanchions and associated hardware installed. Ensure chains and pins are and in good working order.
- Hold onto ladder rails and chains when transiting ladders. Immediately secure ladders found with missing hardware, loose treads or worn non-skid, etc.
- Transit up or down one step at a time, and do not swing from the handrails, or slide down the ladder.
- During zone inspections and daily fire marshal inspections, QA the overall material condition of the ship's ladders.
- Never leave unsecured objects near or against ladders or handrails.

Lessons Learned

by MOC Safety Committee

An employee was climbing out of the forward hold, with his/her bike in one hand, when he grabbed an area that was not secure (a broom handle left against the ladder) and fell back into the hold. This fall resulted in a 2.5 inch laceration to his left knee. No other injury occurred. The employee was placed on limited duty for 2 weeks due to nature of injury; no bending of the knee past 90 degrees for 2 weeks.

Why did this accident happen?

1. What is the Direct Cause?

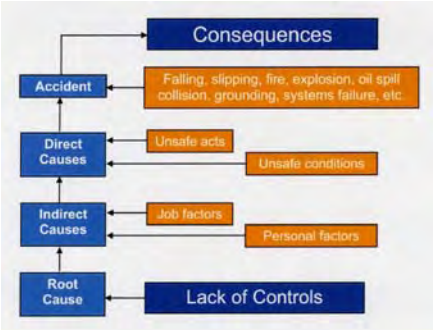
A Direct cause can usually be described as either Unsafe Acts (not wearing PPE, ignoring safe working practices, carelessness…) or Unsafe Conditions (dark, noisy, toxic, steep inclines, heavy objects, etc.).

2. What is the indirect cause?

The indirect cause for most all accidents can be attributed to one of the following: Personal Factors (fatigue, lack of training, etc.) or Job Factors (poor design, equipment, or manning).

3. What is the root cause?

The Root cause reported was:
Lack of situational awareness, he grabbed a broom handle rather than something stable to support his weight as he was climbing up the rungs. Also, he should have had some assistance getting his bike.



Risk assessment of this accident reveals:

The employee should have asked for assistance in getting his bike out of forward hold. Most likely the weight and shape of the bike were not conducive to being carried up the ladder. The employee was not completely aware of his surroundings; instead of grabbing a rail or stanchion, he grabbed a mop handle; BUT, the mop should have never been there in the first place! The root cause for most accidents comes down to a lack of Controls; lack of management or poor management. Either we do not have guidance, or did not follow it. In this case, are there any rules against carrying a bike up the ladder alone? Where is the mop supposed to be stowed? Were the rules followed? The mop definitely contributed to the accident; it should be stressed that **unsecured objects should not be left near ladders**.

Rules exist for a reason: remember to follow them, or eventually something unwanted will happen (the definition of an Accident?). Let's prevent similar accidents from happening again!